Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_ SSE.1\_\_\_\_\_\_\_APR.1\_\_\_\_\_\_\_

**Alg. 2 Demonstration of Understanding- Quadratics 2 Study Guide** APR.4\_\_\_\_\_\_APR.3 \_\_\_\_\_\_

SSE.1 \_\_\_\_\_\_ SSE.2 \_\_\_\_\_\_

BF.4 \_\_\_\_\_\_

(SSE.1)

1. Label the parts of this expression by filling in the blank spaces.

(APR.1)Simplify each expression and justify each step (describe/show/state each property used).

2.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |

3.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
| ) |  |

4.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |

5.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |

6. In two or more **sentences**, describe how to identify like terms.

7. Factor the expression and explain how you are using division to justify your answer.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |

8. Factor the expression by grouping and label each step.

a. b.

9. Factor the expression and prove your factoring is correct by using distribution.

|  |  |
| --- | --- |
| Factoring | Proof |
|  |  |

(APR.3)

10. In two or more sentences, explain what the ZPP allows you to do with factors?

11. Use the following equation for parts a-c:

a. Find the zeros of the quadratic. b. Find the vertex of the quadratic

c. Construct a rough sketch of the quadratic by labeling the roots and vertex.

Find the roots of each quadratic and write each one as a coordinate.

12. 13.

14. 15.

(SSE.2) Find the zeros by completing the square.

16. 17.

18. In two or more sentences, describe the difference of squares property.

19. Find the zeros by applying the difference of squares.

20. State the quadratic formula 21. State the discriminant formula

22. Describe how to use the discriminant to determine the number and type of roots.

|  |  |  |
| --- | --- | --- |
| Discriminant value is: | Number of roots | Type of root. |
|  |  |  |
|  |  |  |
|  |  |  |

Complete parts a-c for each quadratic equation in #23 &24..

1. Find the value of the discriminant
2. Describe the number and type of roots.
3. Find the exact solutions by using the Quadratic Formula

23. 24.

25. Use synthetic substitution to find and

a. b.

26. Find the remaining factors of the polynomial.

(BF.4)

27. Based on the ordered pairs: , graph the inverse function.

Find the inverse of the function and justify your steps.

28.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |

29.

|  |  |
| --- | --- |
| Algebraic Work | Justification |
|  |  |